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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,107	10/08/2003	Jun Sumioka	03500.017623.	4456

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EXAMINER	
MUHAMMED, ABDUKADER S	
ART UNIT	PAPER NUMBER
2627	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/680,107	SUMIOKA, JUN	
	Examiner	Art Unit	
	Abdukader Muhammed	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date [redacted]
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawing

2. Figures 9A, 9B, and 9C should be designated by a legend such as **--Prior Art--** because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. (US Publication 2002/0058120 A1) in view of Horie et al. (US 6,128,273).

Regarding Claim 1, Uchida et al. teach a domain-wall-displacement type magneto-optical recording medium comprising: a substrate (substrate 11, see figure 1A) having formed therein a

groove and a land (see figure 4) at least either of which is used as a recording track for an information (lands and grooves can be used as a recording track alternatively or together, see page 5, paragraph [0067]); a magnetic layer (recording layer 12 which includes three magnetic layers; see figure 1A and page 3, paragraph [0047]) formed on the substrate; and an annealed region (annealed region 100, see figures 3 and 4) reformed by annealing the magnetic layer between the recording tracks, wherein the annealed region is formed linearly along the recording track (see figures 3 and 4 and page 5, paragraph [0066]). Uchida et al. differ from the claimed invention in that it does not show the recording track being wobbled or zigzag shaped.

Horie et al. on the other hand teach a recording disc which has a wobbled recording track (groove and/or land).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a wobbled recording track in the system of Uchida et al. since Horie et al. teach a wobbled track (groove and/or land) for recording ATIP (absolute time information) or ADIP (address information) (see the abstract).

Regarding Claim 2, as applied to claim 1 above, Uchida et al. also teach that either one of the groove or the land is used as a recording track (see paragraph [0067]) 1and the width of the annealed region is not less than the width of the land or groove between the recording tracks. Note that in figure 5 the width of the annealed region 120 is larger than the land 51 when the groove 52 is used as a recording track.

Regarding Claim 3, as applied to claim 11 above, Uchida et al. also teach the that both the groove and the land are used as the recording tracks (see paragraph [0067]); the annealed

region is formed on a sidewall portion at a boundary of the land and groove between the recording tracks (see figure 4); and the width of the annealed region is not less than a maximum of the width of the sidewall portion at the boundary of the land and groove. Note that in figure 4, when both groves and lands are used as recording tracks, the annealed region 110 is extended over to both the groove 42 and the land 41.

Regarding Claim 4, as applied to claim 1 above, Uchida et al. also teach that the domain-wall-displacement type magneto-optical recording medium comprises a first magnetic layer (a first magnetic layer 21, see page 3, paragraph [0047]) a domain wall of which is displaceable, a third magnetic layer (a third magnetic layer 23) that holds a recording magnetic domain and has a domain wall coercive force greater than that of the first magnetic layer (see page 3, paragraph [0047], lines 9-11 and page 3, paragraph [0049], lines 1-2) and a second magnetic layer (a second magnetic layer 22) that has a Curie temperature lower than those of the first and the third magnetic layers and is disposed between the first and the third magnetic layers(see page 3, paragraph [0048]).

Regarding Claim 5, Uchida et al. teach the A method of producing the domain-wall-displacement type magneto-optical recording medium, comprising the steps of: forming a magnetic layer on a substrate; and irradiating an area between recording tracks on the magnetic layer with a light beam of a given annealing power to form an annealed region linearly along a recording track (see page 1, paragraph [0010]). Uchida et al. differ from the claimed invention in that it does not show the recording track being wobbled or zigzag shaped.

Horie et al. on the other hand teach a recording disc which has a wobbled recording track (groove and/or land).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a wobbled recording track in the system of Uchida et al. since Horie et al. teach a wobbled track (groove and/or land) for recording ATIP (absolute time information) or ADIP (address information) (see the abstract).

Conclusion

5. The prior art made of record in PTO-892 Form and not relied upon is considered pertinent to applicant's disclosure.

Murakami et al. (US Publication 2004/0057343 A1) teach a magnetic recording medium that includes a disk substrate and a recording layer having magnetic anisotropy along a direction perpendicular to a surface of the disk substrate. The portion between the recording tracks is subjected to annealing so that the tracks for recording information can be separated magnetically from each other. The tracks are also wobbled.

Miyaoka (US Publication 2002/0132138 A1) teaches A manufacturing method of a domain wall displacement type magneto-optical recording medium comprises the steps of depositing a magnetic layer on a substrate to prepare a disc, and irradiating the magnetic layer with a converged light beam while applying a magnetic field and annealing the magnetic layer by a converged light beam between information tracks.

Nishikawa et al. (US Publication 2004/0076083 A1) teach a magneto-optical recording medium capable of obtaining stable tracking servo signals with a narrow tracking pitch with less influences of cross talk and cross write.

Ishibashi et al. (US Publication 2002/0154578 A1) teach an optical disk made of tracks that are magnetically separated from one another by scanning a focused light beam over lands between tracks at a predetermined power and annealing to lower the magnetic anisotropy of a magnetic layer on the lands.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdukader Muhammed whose telephone number is (571) 270-1226. The examiner can normally be reached on Monday-Thursday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. Customer Service can be reached at (571) 272-2600. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

am
16 January 2007

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER